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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/639,946	08/17/2000	Hidehiko Nagaya	0834-0275-3	4852

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

TSAI, HENRY

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 01/15/2004

21

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/639,946

Applicant(s)

NAGAYA ET AL.

Examiner

Henry W.H. Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,21-25,32-35,37-40 and 58-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 83-85 is/are allowed.
- 6) ☒ Claim(s) 19, 21-25, 32, 33, 37-40, 58-60, 62-64, 68-75, and 77-82, 86, 87, 89 and 90 is/are rejected.
- 7) ☒ Claim(s) 34,35,61,65-67,76 and 88 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 19, 23, 24, 32, 38, 39, 58, 64, 68, 71, 72, and 77-82, and 90 are rejected under 35 U.S.C. 102(b) as being anticipated by Elmes (U.S. Patent No. 3,576,200).

Referring to claims 19 and 68, Elmes discloses, as claimed, a tip (cutting insert B, see Fig. 3) comprising, a first edge corner (28 in cutting insert B, see Fig. 3) having a corner angle less than 90°, and an adjacent second edge corner (the other 28 corner in cutting insert B, see Fig. 3) having a corner

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angle of less than 90° , wherein the tip (cutting insert B, see Fig. 3) is formed of an substantially quadrilateral-shaped plate, and wherein the tip includes at least one edge corner (the corner different from corners 28, 28, see Fig. 3) having a corner angle of greater than 90° .

Referring to claims 32 and 77, Elmes discloses, as claimed, a cutting tool (see Fig. 1) comprising: a tool body having a distal end; and a plurality of tips mounted to the distal end of the tool body (the outer peripheral end, see Fig. 1), each tip of the plurality of tips (cutting insert B, see Figs. 1 and 3) comprising a plate of substantially quadrilateral shape (see cutting insert B, see Figs. 1 and 3), the plate having a first corner (28 in cutting insert B, see Fig. 3) having a corner angle of less than 90° and an adjacent second corner (the other 28 corner in cutting insert B, see Fig. 3) having a corner angle of less than 90° , wherein at least one of the first corner (28 in cutting insert B, see Fig. 3) and the second corner (the other 28 corner in cutting insert B, see Fig. 3) is arranged to project along an outer periphery of the distal end of the tool body.

As to claims 23, 38, and 71, Elmes also discloses: the plate has a seating face and a cutting edge face (the face shown in Fig. 3), wherein the tip (cutting insert B, see Figs. 1 and 3)

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has at least one side surface (the outer face 24, see Fig. 3) that extends between the seating face and the cutting edge face, wherein the at least one side surface (the outer face 24, see Fig. 3) outwardly inclines from the seating face to the cutting edge face (see Fig. 1).

As to claims 24, 39, and 72, Elmes also discloses: the seating face is parallel to the cutting edge face (see cutting insert B in Fig. 1).

As to claim 58, Elmes also discloses: all of the plurality of tips (see cutting inserts B in Fig. 1) are identical in shape.

As to claim 64, Elmes also discloses: said plurality of tips (see cutting inserts B in Fig. 1) comprises at least four tips.

As to claim 78, Elmes also discloses: at least one of the first edge corner (28 in cutting insert B, see Fig. 3) and the second edge corner (the other corner 28 in cutting insert B, see Fig. 3) is arranged along a front edge of the distal end of the tool body.

As to claims 79-81, Elmes also discloses: second, third and fourth tips (see cutting inserts B in Fig. 1) mounted to the distal end (the outer peripheral end, see Fig. 1) of the tool body, said second, third and fourth tips each comprising a plate including a first edge corner having a corner angle of less than 90°, and an adjacent second edge corner having a corner angle of

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less than 90 °, wherein at least one of the first edge corner (28 in cutting insert B, see Fig. 3) and the second edge corner (the other corner 28 in cutting insert B, see Fig. 3) of said second (third or fourth) tip is arranged along the outer periphery of the distal end of the tool body.

As to claim 82, Elmes also discloses: said first tip, said second tip, said third tip, and said fourth tip are identical in shape (see cutting inserts B in Fig. 1).

As to claim 90, Elmes also discloses: the tip includes at least one edge corner (the corner different from corners 28, 28, see Fig. 3) having a corner angle of greater than 90°.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 21, 22, 25, 33, 37, 40, 59, 60, 62, 63, 69, 70, 73-75, 86, 87, and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elmes.

Elmes discloses the claimed invention except for: a third edge corner having a corner angle of less than 90° (claims 21, 37, 69, and 89); a cutting edge extending between the first edge corner and the second edge corner is not parallel to an opposite cutting edge (claims 22, and 70); the seating face is not parallel to the cutting edge face (claims 25, 40, and 73); said tip has two opposing cutting edges defined as long cutting edges and another two opposing cutting edges defined as short cutting edges, and wherein said long cutting edges are not parallel to one another (claims 59, 74, and 86); and one of said short cutting edges extends between the first edge corner and the second edge corner (claims 60, 75, and 87).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Elmes's tool to comprise a third edge corner having a corner angle of less than 90° ; a cutting edge extending between the first edge corner and the second edge corner is not parallel to an opposite cutting edge; the seating face is not parallel to the cutting edge face; said tip has two opposing cutting edges defined as long cutting edges and another two opposing cutting edges defined

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as short cutting edges, and wherein said long cutting edges are not parallel to one another; and one of said short cutting edges extends between the first edge corner and the second edge corner since they just an alternative arrangement comparing with that of Elmes's tool.

Further, as shown in re Dailey, 149 USPQ 47 (CCPA 1976), to make changes in form/shape generally does not provide patentable weight to the claimed invention.

Response to Arguments

5. Applicant's arguments mailed 8/13/03 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6. Claims 61, 34, 35, 65-67, 76, and 88 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 83-85 are allowed.

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8. The following is a statement of reasons for the indication of allowable subject matter: Elmes (U.S. Patent No. 3,576,200), the closest reference, and the other prior art do not teach or fairly suggest:

a cutting tool comprising: each tip of the plurality of tips has two opposing cutting edges defined as long cutting edges and another two opposing cutting edges defined as short cutting edges; one of the long cutting edges in a first of the plurality of tips projecting towards the distal end of the tool body is defined as a first front peripheral cutting edge and one of the short cutting edges in the first of the plurality of tips is defined as a first outer peripheral cutting edge; and one of the short cutting edges in a second of the plurality of tips projecting towards the distal end of the tool body is defined as a second front peripheral cutting edge and one of the long cutting edges in the second of the plurality of tips is defined as a second outer peripheral cutting edge (in claim 34); and

a tip comprising said first edge corner is defined by a first cutting edge and a second cutting edge; said first cutting edge includes a main cutting tooth portion and a sub-cutting tooth portion; said sub-cutting tooth portion is provided adjacent a joint between said first cutting edge and said second cutting edge; said sub-cutting tooth portion is slightly inclined

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with respect to main cutting tooth portion; and wherein said corner angle of said first edge corner is defined as an angle between said main cutting tooth portion of said first cutting edge and said second cutting edge (in claims 61, 65, 76, and 88);

a cutting tool comprising: the first tip and said third tip are provided within a first groove on said tool body, said first tip and said third tip being provided at different locations along the axis of rotation, said first tip and said third tip being spaced apart along the axis of rotation; and said second tip and said fourth tip are provided within a second groove on said tool body, said second tip and said fourth tip being provided at different locations along the axis of rotation, said second tip and fourth tip being spaced apart along the axis of rotation (in claims 66 and 84);

a cutting tool comprising: first, second, third and fourth tips; each tip of said first tip, said second tip, said third tip, and said fourth tip have two opposing cutting edges defined as long cutting edges and another two opposing cutting edges defined as short cutting edges; one of said long cutting edges of said first tip extends along the outer periphery; one of said short cutting edges of said second tip extends along the outer periphery; one of said long cutting edges of said third tip extends along the outer periphery; and one of said long cutting

edges of said fourth tip extends along the outer periphery (in claim 83).

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 receptionist whose telephone number is (703) 305-3900.

10. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into

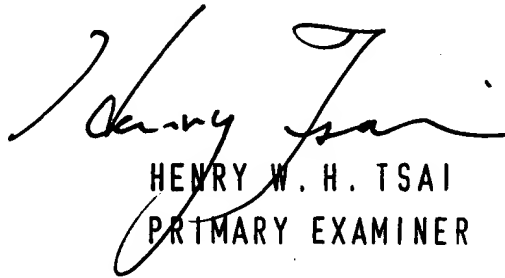
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applicants who authorize charges to a PTO deposit account.

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HENRY W. H. TSAI
PRIMARY EXAMINER

January 11, 2004